

REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of May 22, 2009 (Office Action). As this response is timely filed within the 3-month shortened statutory period, no fee is believed due. However, the Examiner is expressly authorized to charge any deficiencies to Deposit Account No. 14-1437.

Claims Rejections – 35 USC § 101

Claims 1 and 13 were rejected under 35 U.S.C. § 101 because it was asserted that the claimed invention is directed to non-statutory subject matter. More specifically, it was asserted that Claim 1 neither transforms underlying subject matter nor positively ties to another statutory category that accomplishes the claimed method steps and Claim 13 does not fall into one of the four statutory categories of invention.

Regarding Claim 1, Applicants submit that a person of ordinary skill in the art would readily appreciate that practicable embodiments of the claimed invention would be conducted with the aid of a computing machine. Such computing machines are commonly understood to have memory. Further, the operations recited in the claims clearly change the state of the underlying data since the cache, register, or other memory on which the data is stored must be transformed to have a different magnetic polarity, electrical charge, or the like depending on the technology that is used. These are real physical changes. Further, memory is a real physical article. As such, Applicants submit that the method claims perform a transformation under the “machine or transformation” test and thus qualify as patent-eligible subject matter.

In addition, Claim 1 has been modified so that it is clearly tied to another statutory category, namely a computer apparatus including a speech-based user interface and a speech recognition device.

Claim 13 has been amended to clearly recite hardware such as a computer, a speech-based user interface, and a speech recognition device.

Claims Rejections – 35 USC § 103

Claims 1, 7, and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Published Patent Application 2003/0189603 to Goyal, *et al.* (hereinafter Goyal) in view of U.S. Patent 6,393,389 to Chanod, *et al.* (hereinafter Chanod).

Although Applicants respectfully disagree with the rejections, Applicants have amended Claims 1, 7, and 13 in an effort to even more clearly define the present invention and to facilitate prosecution of the instant application. Claims 19-21 have been added. The claim amendments and added claims are fully supported throughout the Specification and no new matter has been introduced.

Aspects of Applicants' Invention

It may be helpful to reiterate certain aspects of Applicants' invention prior to addressing the cited references. One embodiment of the invention, as typified by Claim 1, is a computer-implemented method of efficiently presenting correction options in a speech-based user interface.

The method can include receiving at least one information input; processing the at least one information input and determining a confidence score for the at least one information input by a speech recognition device; assigning a HIGH, MEDIUM, or LOW confidence level to the at least one information input based upon the confidence score; if the confidence level is LOW, performing an immediate confirmation step; if the confidence level is MEDIUM or HIGH, placing the at least one information input in batch data; and performing a batch confirmation step after all information inputs have been received and assigned a confidence level. See, e.g., Specification, paragraphs [0019] to [0023]; see also Figs. 1-2.

The Claims Define Over The Prior Art

Speech interfaces are frequently used in conjunction with database-driven systems to provide users with a speech-based method of searching for information. One common example of such a system is a flight information system where a user can verbally specify

an argument, such as an airline or city, for which the speech-enabled system can search. Speech interfaces can work effectively in cases where a speech recognition engine correctly recognizes the voice commands. If the engine misrecognizes the voice commands, however, the database search will return the information based on misrecognized user requests and therefore be incorrect, unless the user is provided with an opportunity to correct the request. See Specification, paragraph [0002].

Correction within a speech interface, however, can be problematic due to the effects caused by the confirmation steps. Specifically, each voice command may result in a series of options that are played to the user. If too many options are presented, the confirmation process may become tedious as each option is presented. However, if no options are present and hence no confirmation is permitted, misrecognition may go uncorrected. See Specification, paragraph [0003].

As a result, it is often beneficial to have a user confirm a selection to ensure that a selection has not been misrecognized by the speech interface. However, if each and every voice command is required to be confirmed, the number of confirmation steps can result in long and tedious dialog flows between the user and the speech interface. At the same time, if confirmation steps are not used or are underutilized, then the user may be lead down the wrong path or may be given incorrect information due to the misrecognition of the voice command by the speech interface. See Specification, paragraph [0004].

Accordingly, it would be beneficial to reduce the number of confirmation steps, thereby reducing the length of time a user would interact with the speech interface. It would also be beneficial to maintain a high degree of accuracy, thereby reducing the consequences of misrecognition and/or correcting any misrecognition sooner. See Specification, paragraph [0005].

The present invention provides a method and a system for efficiently presenting correction options. More specifically, the present invention is capable of analyzing user

voice commands based on confidence levels to determine whether a confirmation step should be presented immediately or in batch and, for the last option, the order in which the correction options should be presented if the user rejects the batch confirmation. See Specification, paragraph [0006].

In general, the present invention provides a method for efficiently presenting correction options, wherein the method includes the steps of requesting an information input from the user. Then a confidence level is assigned to the information supplied by the user. If the confidence level is LOW, then the system performs an immediate confirmation step with the resulting information having a HIGH confidence level. If the confidence level assigned is MEDIUM or HIGH, then the information is placed into a data set that is confirmed in a batch confirmation step. See Specification, paragraph [0007].

The batch confirmation method begins with the step of presenting captured information to the user for confirmation. The user is then queried as to whether all the information is correct. If the user responds negatively, then the method proceeds by sorting the information in ascending order by confidence level. The system then creates a menu of items that may be changed. The system then prompts the user for an information item to be changed using the menu. The desired option is selected by the user. Finally, the user is queried as to whether the user is finished making changes to the information. If yes, then the match confirmation step is complete. If no, then the system permits the user to make additional changes until the information collection is complete. See Specification, paragraph [0008].

Goyal discloses a system and method for organizing and prioritizing recognized text, and more particularly, a method and system for categorizing recognized text according to confidence levels in the correctness of the recognized text. The system and method may categorize recognized text into two or more different confidence levels. A user interface can display recognized text based upon the confidence level assigned to

that text, thereby drawing a user's attention to that text for which the recognition process has a low confidence in its correctness estimate. The user interface may also allow a user to correct erroneously recognized text with different techniques, according to the level of confidence that the recognition process has in the correctness of the text. See the Abstract.

Clearly, the subject matter of Goyal, which concerns categorizing recognized text according to confidence levels, is totally different from the subject matter of the present invention, which concerns efficiently presenting correction options in a speech-based user interface. More specifically, Goyal does not disclose the concept of determining whether a confirmation step should be presented immediately or in batch based on confidence levels.

Therefore, Goyal at least does not disclose assigning a HIGH, MEDIUM, or LOW confidence level to the at least one information input based upon the confidence score; if the confidence level is LOW, performing an immediate confirmation step; and if the confidence level is MEDIUM or HIGH, placing the at least one information input in batch data and performing a batch confirmation step after all information inputs have been received and assigned a confidence level, as recited in Claims 1, 7, and 13 of the instant application.

Chanod does not make up for the deficiencies of Goyal as discussed above.

Accordingly, the cited references, alone or in combination, fail to disclose or suggest each and every element of Claims 1, 7, and 13. Applicants therefore respectfully submit that Claims 1, 7, and 13 define over the prior art. Furthermore, as each of the remaining claims depends from Claims 1, 7, or 13 while reciting additional features, Applicants further respectfully submit that the remaining claims likewise define over the prior art.

Applicants thus respectfully request that the claim rejections under 35 U.S.C. § 103 be withdrawn.

CONCLUSION

Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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